

COOPER et al.
Appl. No. 10/603,092
November 12, 2004

AMENDMENTS TO THE ABSTRACT:

Please amend the Abstract as follows. A clean copy of the Abstract on a separate sheet of paper is attached.

The present invention overcomes many of the disadvantages of prior lithographic microfabrication processes while providing further improvements that can significantly enhance the ability to make ~~more complicated~~ semiconductor chips at lower cost. A new type of programmable structure for exposing a wafer allows the lithographic pattern to be changed under electronic control. This provides great flexibility, increasing the throughput and decreasing the cost of chip manufacture and providing numerous other advantages. The programmable structure consists of an array of shutters that can be programmed to either transmit light to the wafer (referred to as its "open" state) or not transmit light to the wafer (referred to as its "closed" state). ~~The programmable structure can comprise or include an array of selective amplifiers. Thus, each selective amplifier is programmed to either amplify light (somewhat analogous to the "open" or "transparent" state of a shutter) or be "non-amplifying" (its "closed" or "opaque" state). In the non-amplifying state, some portion of the incident light is transmitted through the amplifier material. The shutters and selective amplifiers can work in tandem to form a "programmable layer".~~ A programmable technique is provided for creating a pattern to be imaged onto a wafer that can be implemented as a viable production technique. ~~Thus, the present invention also provides a technique of making integrated circuits. A diffraction limiter can be used to provide certain advantages associated with contact lithography without requiring some of the disadvantages of contact lithography.~~

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ABSTRACT

The present invention overcomes many of the disadvantages of prior lithographic microfabrication processes while providing further improvements that can significantly enhance the ability to make semiconductor chips at lower cost. A new type of programmable structure for exposing a wafer allows the lithographic pattern to be changed under electronic control. This provides great flexibility, increasing the throughput and decreasing the cost of chip manufacture and providing numerous other advantages. The programmable structure consists of an array of shutters that can be programmed to either transmit light to the wafer (referred to as its "open" state) or not transmit light to the wafer (referred to as its "closed" state). A programmable technique is provided for creating a pattern to be imaged onto a wafer that can be implemented as a viable production technique.